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CLINICAL USE OF BLOOD AND BLOOD COMPONENTS IN THE DEPARTMENT OF ANAESTHESIA, REANIMATION AND INTENSIVE CARE AT THE GENERAL HOSPITAL IN STRUMICA

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Introduction: Blood transfusion is an essential part of the modern health care which saves lives and improves health if properly performed. However, there is a risk despite the possible benefit, as it is the case with any therapeutic intervention. Many people think that the safety of blood can solely be achieved by laboratory control of the transfusion-transmitted diseases. The primary link – the blood donor with a low risk, and the final link in the safety of the transfusion chain – the rational use of blood and its components seem to be forgotten.

Aim: To present the use of blood and blood components at the department of anaesthesia and reanimation within a period of three months (01.01.2010 - 31.03.2010).

Material and method: A retrospective study based on the data from the Register of issued erythrocyte concentrates and fresh frozen plasma at the Department of transfusion medicine, as well as the requests for the above mentioned coming from the Department of anaesthesia and reanimation.

Results: Within the analyzed period, a total of 380 units of erythrocyte concentrates and 263 units of fresh frozen plasma were issued, which is a three month use of all the wards at our hospital. Out of this amount, the department of anaesthesia and reanimation asked for and received 25 units (6.58%) of the total use at our hospital as well as 20 units of FFP, which is 7.6% of the total use. To compare, within the same period the Department of Internal Medicine asked for and received 221 units of erythrocyte concentrate or 58% of the total use, as well as 109 units of fresh frozen plasma, i.e. 41% of the total use.

Conclusion: It is apparent that there is a lower realized use in comparison with the Department of Internal Medicine – a paradox which partly results from:

- a) the modernization of the surgical and anaesthetic technology;
- b) the use of pharmaceutical agents which affect the haemostasis;
- c) the use of crystalloids and colloids where applicable;
- d) the efficient training and co-operation with the doctors-anaesthetists in terms of acquisition of more restrictive protocols – concentration of hemoglobin and hematocrit which do not allow transfusion;
- e) we should not forget the fact that this is a Department where general surgical practice is performed, and therefore, it is not as closely connected with use of blood transfusion.

On the other hand, the worrying increase of the pathology of diseases which need a transfusion therapy (malign – an increase of 2-3% per year, hematological, chronic), as well as the existence of a daily basis hospital whose practice is to transfuse all the diseased who according to their pathology may come from another department, resulted in an increased use of blood and blood components at the Department of Internal Medicine. In future, it is essential to introduce a national policy on the clinical use of blood with adequate regulations and national guidelines which will help us as well as the clinicians to make the right decision for transfusion, i.e. to introduce more restrictive protocols when performing transfusion (well defined indications), because the safety of the patients in need for transfusion greatly depends on this.

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THERAPY WITH DEPLETED ERYTHROCYTE CONCENTRATES AND THE OCCURRENCE OF POST-TRANSFUSION REACTIONS WITH PATIENTS TREATED FROM BONE MARROW INSUFFICIENCY AT THE DAILY BLOOD TRANSFUSION HOSPITAL IN STIP

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Introduction: The application of chemotherapy and irradiation therapy in patients with malignant diseases is suppressing the bone marrow, and because of that, a reduced peripheral cellular level with symptoms of severe anemic syndrome presents itself.

Aim: To present the number and adverse post-transfusion reactions with patients suffering from bone marrow insufficiency, with transfused depleted erythrocyte concentrates.

Material and methods: Patients with bone marrow insufficiency originate from the Eastern part of Macedonia. Patients with hypoplasia, aplasia, osteomyelocytosis and patients with malignant diseases are included, where a suppression of bone marrow occurred due to chemotherapy or applied irradiation therapy. Leukocyte-depleted erythrocyte concentrates are obtained by filtration of erythrocyte concentrates with Baxter-Sepacell RS-2000 and Paul-Purecell RN filters. Analysis samples of hematological basic parameters are taken from the system before and after the filtering, and are treated with automated blood cell counter.

Results: In the past six years, a total of 69 patients with insufficiency of the bone marrow were transfused. From the total number, 11 (15.94%) were patients with aplasia and hypoplasia of the bone marrow, 8 (11.59%) were patients with osteomyelocytosis, 12 (17.39%) with malignant homeopathy, 38 (55.07%) with neoplasm, of which 21 (55.26%) are treated with chemotherapy and 17 (44.73%) patients are treated with combined chemotherapy and irradiation therapy.

Conclusion: For treatment of anemia with patients suffering from bone marrow insufficiency, and the possibility of obtaining frequent febrile, allergic and other post-transfusion reactions, we transfused erythrocyte concentrates with depleted Le. They minimize the sensibility of patients who are exposed to Le-Ag, and the risk of febrile post transfusion reactions is reduced (FPIIT) in patients who are already alloimmunized from Le Ag. Leukocytes as vectors and reservoirs of many infectious agents, such as viruses (CMV, HIV, HTLV, EBV), and also some bacteria. With their removal, the unwanted latter post-transfusion complications are reduced. Despite frequent transfusions, we didn't had severe post-transfusion side effects, so we recommend therapy with leukocyte-depleted erythrocyte concentrates with patients suffering from bone marrow insufficiency.